

## **Neuropsychological assessment in epilepsy surgery: Preliminary experience in a rural tertiary care hospital in North East Malaysia**

<sup>1</sup>Sani Sayuthi, <sup>1</sup>John Tharakan, <sup>1</sup>Maria S Pieter, <sup>2</sup>Win Mar Salmah, <sup>3</sup>S Madhavan, <sup>1</sup>Adnan Tahir, <sup>1</sup>Jain George, <sup>1</sup>Jafri M Abdullah

<sup>1</sup>*Department of Neurosciences, <sup>2</sup>Department of Radiology, <sup>3</sup>Department of Pathology, Universiti Sains Malaysia, Malaysia*

*Address correspondence to:* Sani Sayuthi, Department of Neurosciences, Universiti Sains Malaysia, Kubang Kerian, 16150 Kelantan, Malaysia. Tel +609 766 4240, Fax +609 764 8613, Email: deptneurosciencesppusm@yahoo.com

*Background:* We present our preliminary experience into neuropsychological testing in epilepsy surgery patients to demonstrate how these tests contributed to decide the laterality of epileptic focus, and to assess the effect of surgery on patient cognitive function and quality of life.

*Methods:* Preoperative neuropsychological tests consist of Wechsler Adult Intelligence Scale-III (WAIS) for I.Q, Wechsler Memory Scale-III (WMS) for memory and patients' quality of life (QOLIE 31) were administered to refractory epilepsy patients under evaluation for surgical treatment. These tests were repeated one year post-operatively and trends in change were looked for.

*Results:* Total of seven patients were recruited in this study between July 2004 to July 2006. The aetiologies of refractory epilepsy were pure mesial temporal sclerosis in five patients, dysembryogenic neuroepithelial tumour in one and dual lesion of cavernous angioma with ipsilateral mesial temporal sclerosis in one. The preoperative neuropsychological tests were all in concordance to MRI finding, and showed good contralateral function five lateralises to the right and two to the left. The post-operative Engel seizure count (Median 8.00, IQR 7.00-8.75). The post-operative general IQ (88 vs 79), performance IQ (94 vs 79), verbal memory (89 vs 71), non-verbal memory (88 vs 75) and QOLIE (53.14 vs 44.71) was better compared to pre-operative values. The verbal IQ (84 vs 84) was unchanged.

*Conclusion:* Neuropsychological tests are useful as ancillary investigations to determine the laterality of seizure focus and integrity of function in the contralateral temporal lobe. Following successful surgical treatment, there is a trend towards improvement in memory, IQ and quality of life scores in this small group of patients.